

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Jeffrey Hetherington <jhetheri@freenet.npiec.on.ca>  
Subject: [8094] 30M & /QRP  
Message-ID: <Pine.SGI.3.91.960503100717.6610A-100000@freenet.npiec.on.ca>

I too heard AL7IK last night. Couldn't get to him, although it wasn't for lack of trying 8-). I did have my 1st QRP to California though. Maybe I'll be able to get the cards I need for my basic WAS this summer.

Although I haven't been at this for too long, I really have found no difference in # of calls, or contacts signing /QRP or not. Just my 2 cents.

I have to go out of town for a couple of days, can't wait to get back, I've enjoyed 30M for the past few days.

73/72

Jeff

=====  
L. JEFFREY HETHERINGTON  
Niagara Falls, Ontario, Canada  
VA3JFF Tmps 1996 Qs=003 States=03 Confirmed=00 DXCC=00  
CA CO IN

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: talljazz@teleport.com (Dan Presley)  
Subject: [8087] 30M DX  
Message-ID: <v01530503adaf54fb5421@[206.163.121.197]>

Heard TI9X working a swarm of JA's at 07:30Z (sounded like a contest!-maybe we should ban DX on 30!) & a G4 in qso w/ a W6 at 0500Z- Here's an ideas that will stir up things-how about a 30M only contest modeled on the ARRL 160 & 10 M contests-that way the curmudgeons could use 20 or 40 while the contest is on. By the way, I'm wearing asbestos!

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Kevin Muenzler <wb5rue@amsat.org>  
Subject: [8093] 30M DX  
Message-ID: <01I49H42600C005AUD@ARWEN.UTHSCSA.EDU>

talljazz@teleport.com writes:

>Heard TI9X working a swarm of JA's at 07:30Z (sounded like a contest!-maybe  
>we should ban DX on 30!) & a G4 in qso w/ a W6 at 0500Z- Here's an ideas  
>that will stir up things-how about a 30M only contest modeled on the ARRL  
>160 & 10 M contests-that way the curmudgeons could use 20 or 40 while the  
>contest is on.

>By the way, I'm wearing asbestos!

That could be dangerous if you are flatulent! ;)

Kevin, WB5RUE  
wb5rue@amsat.org

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: bkassel@enet.net (Brian Kassel)  
Subject: [8112] 30M Fun!  
Message-ID: <199605031655.JAA21316@maple.enet.net>

Folks:

Had a really fun QSO this AM. I was chatting with AB7GW/P who was  
set up with his TS-450S beside his RV in OR.  
He couldn't quite stand the QRO guilt trip :>), so he went to 5W, we  
continued the QSO. K6XK, also at 5W and portable in IA broke in.  
We had a fun 3 way chat about QRP etc. using break in type operation.  
These guys are self described QRO op's who just dropped power  
"to see what would happen".  
I was outside on the patio with my QRP+ and my Gel cell.  
Acquiring DX and states is challenging, but sometimes ya just  
gotta smell them ole' roses and spread the cheer just a bit...

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*****
*      Brian D. Kassel W5VBO ---- Ham Radio      *
*      bkassel@enet.net --QRP-L #404, ARCI #3623  *
*      TMPS 1996 Qs=007 States=05 DXCC=01        *
*****
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From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: skw9nqp@aztec.asu.edu (STEVE KALAFUS)  
Subject: [8091] 30M Propagation

Message-ID: <9605031301.AA09563@aztec.asu.edu>

Last night at 0617Z at approximately 10,105 MHZ I worked a rather weak C21/JA1WPX, receiving a 449 and giving a 459. He was calling CQ and not getting many takers. I am running an MFJ 9030 at 5W into a dipole up 20ft.

As Chuck said, the band opens a few times before it really closes down for the night so don't give up too early.

--

Steve Kalafus W9NQP  
Phoenix, Arizona  
skw9nqp@aztec.asu.edu  
ARRL QRP-L 230

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "Harvey D. D. Hetland" <HDHETLAND@paccd.cc.ca.us>  
Subject: [8125] 30M Propagation  
Message-ID: <1B3944498E@manage.paccd.cc.ca.us>

Like Steve, W9NQP, and others I found 30m interesting when I got home from work last night. It was too late for much state-side stuff, but C21/JA1WPX had an excellent signal at 0611Z. I worked C21/JA1WPX again just so I would have him within the window of time for TMPS. I heard JW5HE again in the bottom 10 kHz (worked him on May 1st UTC), several JA stations (managed to work one), R1FJZ/FJL was on and I have previously worked him. I missed OZ7Y last night and this morning (1400 to 1500Z) I chased 9M2TO again and missed him. Time to improve on my wet-noodle dipole?

KH6JOI/QRP has been on around 0600Z with a good signal using a dipole at 15 feet (antenna restrictions). I also worked WL70V last night. WA7TNL reported AB5OU/QRP on the DX packetcluster, but I could not find/hear AB5OU. I did hear both WA7TNL and N7MFB. Tonight no work so maybe I'll get home early enough for some state-side. After next week I have the summer off from teaching duties! No objective like WAS or DXCC ... just having a good "QRP time".

73, Harvey, N6MM.

> Last night at 0617Z at approximately 10,105 MHZ I worked a rather  
> weak C21/JA1WPX, receiving a 449 and giving a 459. He was calling  
> CQ and not getting many takers. I am running an MFJ 9030 at 5W  
> into a dipole up 20ft.  
> As Chuck said, the band opens a few times before it really closes

> down for the night so don't give up too early.  
>  
> --  
>                   Steve Kalafus W9NQP  
>                   Phoenix, Arizona  
>                   skw9nqp@aztec.asu.edu  
>       ARRL QRP-L 230  
>  
>

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Mike Robinson <miker@cc.com>  
Subject: [8104] 30M Propagation  
Message-ID: <9605031534.AA11858@voder.nsc.com>

30M was very nice last night.  
I QSO'd with W7KTE in OR from CO.  
5W into my High performance HF Rain Gutter: 579  
50W into his Windom: 539

As usual, the band was perfectly quiet until we  
started chatting, then the QRMers fired up.

QRManmade?  
QRNatural?

=====  
NCARC Superfest, June 1st, Larimer County Fairgrounds, Colorado  
=====  
7.3 de Michael AA0UB           miker@cc.com           michael@frii.com  
                  http://www.frii.com/~michael  
          QRP-L #126       Norcal #857       CQC #180  
=====

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: [8134] AB50U vs. K5FO  
Message-ID: <199605032128.VAA09948@chuck.dallas.sgi.com>

Gang,

I concede that Dr. Timothy Pettibone, a.k.a. AB50U, did on the 27th day of April, 1996 soundly and thoroughly beat Dr. Chuck Adams, a.k.a. K5FO during the NorCal QTTF.

But I do wish to bring to the attention of Dr. Timothy Pettibone, page 111 of the May 1996 issue of QST, that he did take first place in the NM section of SS with a score of 16,500. Congratulations are in order for a job well done. My call is on the page somewhere below that.

: -)

dit dit there's always next year

--

Chuck Adams (K5FO CP-60) adams@sgi.com  
K5FO Tmps 1996 Qs=009 States=07 Confirmed=00 DX=01  
AZ CO IN MI SD UT WI

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Tony Fishpool <101573.3220@CompuServe.COM>  
Subject: [8088] Browsing the Digest.  
Message-ID: <960503095844\_101573.3220\_IHK97-2@CompuServe.COM>

Like Brian (G0UKB) I get the digest. I use VIEW which is a SMTP mailer. It's main use is for creating/reading mail for TCP/IP networks. It has a digest option that magically splits each item up and allows each to be saved (if you wish) to disk as you read it. For anyone out there that is still using PCelm as a mailer it's like the difference between using a text editor and Edlin in DOS. I got my copy off the QRZ CD rom. I can upload it if anyone is interested but if there is a Windows alternative that would be of interest to me.

Kind Regards

Tony - G4WIF

(14 Days till FDI, not that I am counting you understand!)

>I get qrp-1 daily in digest form. Does anyone know of any good tools  
>which will allow me to jump from append to append and file those I want  
>to keep for posterity. Currently I browse the file sequentially and  
>cut & paste what I want to keep.  
>Brian - G0UKB / KB8YKJ

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: bfollett@ditell.com  
Subject: [8138] CCW Libraries--another site  
Message-ID: <199605032232.QAA22229@orion.ditell.com>

Gang:

If you are looking for CCW software, Coherent (for xmit/receive in BPSK mode), and other related software from de Carle, VE2IQ, is now available, I am told, at the following address:

<http://w3.ietc.ca/home/bill/bbs.htm>

-----  
Bob Follett WA7FCU, QRP-L # 129, NorCal, ARCI, 10-10  
2861 Estates Dr. VOICE: 801.649.6457  
Park City, UT 84060 Home Office E-mail: bfollett.ditell.com

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: tb@tb.forth-ev.de (Thomas Beierlein)  
Subject: [8110] CCW Library  
Message-ID: <m0uFFKf-0001WqC@Darkstar>

In September '95 John McClun N3REY wrote:

>> It has come to my attention that the library location for the CCW  
>> compendium was entered wrongly. It should read:  
>> ftp.clark.net/pub/mcclun

I tried this location but get 'unknown host' from my FTP.  
Has anybody actual information about this CCW library?  
Are there other elctronic informations available (Mailing lists,  
ftp archives...)?

I'd be glad to get some informations and pointers.

vy 72 + 55

Tom DL1JBE (tb@tb.forth-ev.de, tb@htwm.de)

--

"Do what is needful! And no more."

Ursula LeGuin: Earthsea

--

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996

From: harry.bump@hamdata.leba.net (Harry Bump)

Subject: [8140] CW Mobile

Message-ID: <829999761@hamdata.leba.net>

Hi Guys,

Here's the 'few lines' about the mobile CW setup here:

I built the NN1G rig in a small military surplus equipment box that originally held a 'modulation tester' of some sort. It's the right size and very durable. My front panel is a piece of pc board. I copied the general mechanics for tuning capacitor mounting from Heathkit (HW-8) by soldering brass flathead hardware to the copper board for mounting the sub-panels and my panel labelling was done using my spreadsheet program to create a bordered label for each control. They are glued to the painted front panel and then the whole panel is covered with a sheet of lexan with holes in the proper spots. Included in the package is a Curtis keyer. I get power for the rig from a separate gel-cell battery (VERY little ignition noise) and pipe the audio into the tape player of the vehicle using an old (no tape) cartridge with the element from one of those old transistor radio earphones glued in the cartridge where the machine 'reads' the tape.

The amplifier is from the original 'Boots for the HW-8' article in QST (that's back a few years) and is bandswitched for 80, 40, 20, and 15 meters. One watt drive produces 12 watts out. I have it tied down in the rear hatch compartment of my vehicle. Power is supplied from a jack installed on the taillight access panel that is wired to the taillight line (fused at 10 amps; draws about 4, maybe 6 with the amp running). I've got a relay control line from the amp to the driver's seat with a T/R switch in a 35mm film canister to get the amp in and out of the feedline (would like to build some sort of carrier operated relay in the future). The taillights must be on to run the amplifier!

The mouse works great as a keyer! Got rid of the weight of the ball and epoxied the soft velcro to the mouse bottom... talked my daughter into sewing the velcro 'hooks' to a piece of scrap material big enough to tie around my thigh and now the keyer stays put. Found that I prefer keying 'backwards' - that is keeping the mouse in front of my hand (like a conventional keyer) and tapping the switches with

my index finger and side of my thumb. When I tried to use it while 'holding' the mouse under my hand it felt awkward.

In the interim (while I'm working on my carrier-operated relay) I may try to install a T/R switch for the amplifier on the side of the mouse... should be easier than holding the 35mm canister in the other hand.

I've got a 45-50 minute country drive to and from work and have been having a ball on 20 meters. When the band is dead I practice my keying and am sometimes surprised to get responses to my 'CQ DEAD BAND' calls! Have worked into Europe several times from Pennsylvania and ragchews with guys in the southwest seem pretty easy to find. The antenna is nothing special; a bumper-mounted Hustler. Am anxious to (finally) get started on my Cascade so I can be lazy and do some mobile phone work - ought to be interesting when the next cycle comes around!

72,

Harry      KM3D  
QRP/ARCI   #3875  
NORCAL    #1295

P.S. CW mobile is FUN - make sure it's also SAFE. Think everything through; play with it in the driveway. Ergonomics is everything (cables MUST be out of the way, etc...). You cannot afford to have problems with your toy while cruising down the highway. My vehicle has a 5-speed manual transmission. Between operating the vehicle and the radio and keeping notes on a notepad you'll have your hands FULL. You must be comfortable with full CW copying in your head to consider CW mobile operation. Never had a problem and don't intend to (knock on wood).

P.P.S. Sorry I took so much space - 'one thing led to another' !

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Mike Connor <mikec@primenet.com>  
Subject: [8109] Dave Benson's e-mail address  
Message-ID: <01BB38D1.458E61E0@mikec.primenet.com>

Hi group,  
Subject says it all. Misplaced it somewhere. Sent him a message with = what I thought was the correct address, but no go...Anyone have it = handy?  
Mike



NQ7K

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Mike Connor <mikec@primenet.com>  
Subject: [8122] Dave Benson's email address- got it tn timer :-)  
Message-ID: <01BB38E0.6E0A0200@mikec.primenet.com>

Thanks guys, got it.:-)  
Mike  
NQ7K

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Larry East <LVE1@inel.gov>  
Subject: [8096] Delete key  
Message-ID: <2.2.16.19960503143938.31ff6b0a@134.20.32.17>

>ObQRP - Is anyone else hitting "delete" when the subject is, "30M  
> Contesting?"  
>

Very rapidly... and looks like I'll be doing the same for a lot of "Re: Help  
Make a Wish" messages as well.

Any we wonder why our brothers/sisters in G-land think yanks run-off at the  
keyboard too much??

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "Dan Harriman" <KC5GXL@pnx.com>  
Subject: [8132] delete key  
Message-ID: <199605032028.QAA46739@nss2.CC.Lehigh.EDU>

I sure have learned what the delete key is used for! I even  
unsubscribed to a reflector because of all the B.S.  
73 de kc5gx1 aka Dan

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996

From: Marshall Emm <75230.1405@compuserve.com>  
Subject: [8127] Engineers  
Message-ID: <960503195220\_75230.1405\_HHB59-1@CompuServe.COM>

The "humorous" piece on engineers went out in error. I'm working my way through new software and somehow hit the wrong button or something. So, if anyone was offended or thought it was a waste of bandwidth, I'm sorry. And I guess I'm just lucky I wasn't discussing the top-secret plans for my new thermo-nuclear QRP rig [g].

73/72  
Marshall  
AA0XI

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: kd7s@valleynet.com (Bill Jones)  
Subject: [8145] Equipment Discounts at Dayton?  
Message-ID: <199605040151.SAA06486@valleynet.com>

Perhaps some of you veteran Dayton goers can enlighten a first-timer. It is it unreasonable to expect some kind of "Show Special" discount from manufacturers and/or kit suppliers of QRP gear? I compared my Dayton Wish-List with my checkbook and discovered the numbers were about 3 dB apart

=====  
Bill Jones - KD7S <><  
QRP-L Member #85  
Sanger, California  
Reply to kd7s@valleynet.com  
=====

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: cjl@mail09.mitre.org (Charles J. Ludinsky)  
Subject: [8090] Forty-9er Modification  
Message-ID: <960503081014.29861@mail09.0>

Here's a change to the receiver input circuit that appears to greatly reduce SW broadcast interference, while requiring no torroids or major circuit changes.

- (1) Reduce C1 from 22pF to 5-10pF (I used a 6 pF capacitor).
- (2) Remove C20 (either 150 or 180pF).

(3) Replace C7 (22pF) with a 270pF capacitor.

(4) Place a 470pF capacitor from pin 1 of the NE602 to ground.

The series combination (at 171pF) of the 270pF and 470pF effectively replaces C20.

This change is an attempt to improve the Q of the parallel input circuit, thereby enhancing its selectivity. Checking before and after with a grid dip meter, the modified circuit appears to have a much sharper resonance than the original circuit.

After the modification, the SW broadcast interference was greatly reduced; however, this observation is based on a single evening's use of the modified circuit -- we all know how variable conditions can be. I did not notice any significant reduction in receiver sensitivity; however, even if there is some reduction, the improvement in SW broadcast rejection seems to more than compensate. Keep in mind, this circuit reduces SW broadcast interference, but does not eliminate it.

Those of you who are running SPICE or other circuit simulators might want to compare this approach with the original. I'm sure that there is considerable room for optimization of component values. I'd be particularly interested in changes in sensitivity and further modifications that might reduce any losses.

[Further enhancements to performance might be achieved by splitting the resonance capacitance (i.e., the 150-180pF) into two series components: one as is suggested here (but with a series value totalling about 90pF) and another (also totalling 90pF) on the "left" side of RFC1, with C1 (increased to a much higher value) connected to the low impedance "tap" of the series capacitor. Related changes might include decreasing the value of RFC1 while simultaneously increasing the parallel capacitance; this might help increase the overall Q of the circuit.]

Comments, suggestions, questions would be appreciated.

73 de N1RXT, Chuck

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Dick Schneider <74602.3317@CompuServe.COM>  
Subject: [8137] FS OMNI-D HX TCVR  
Message-ID: <960503222536\_74602.3317\_EHH108-1@CompuServe.COM>

FOR SALE: TEN TEC OMNI-D HF TRANSCEIVER AND POWER SUPPLY  
(PRICE REDUCTION)

JUST REBUILT BY TEN TEC. EXCELLENT CONDITION. ENTIRE RECEIVE PRE-SELECT ASSEMBLY WAS REPLACED WITH AN UPGRADED MODEL. GREAT EARS!

160-10 Meters. Can add 30 Meters and one other band. Superb starter rig.

80-100 Watts Output. CW and SSB. Excellent filtering for CW. Can crank power down to MW level for QRP and QRPP operation.

POWER SUPPLY: TEN TEC 280 W/2 12V AUX OUTPUTS AS WELL AS MAIN OUTPUT.

45 DAY WARRANTY: IT WORKS SATISFACTORILY FOR 30 DAYS OR I WILL RETURN YOUR MONEY AND SHIP THE RIG AND PW SUPPLY BACK.

\$550 INCLUDES Shipping.

72/73 Dick/KB0SRV..

E-mail from: Richard Schneider, 03-May-1996

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Tim English <dx@sun.tir.com>  
Subject: [8135] FS: 6ah gel cells  
Message-ID: <2.2.32.19960503224944.0069d3d4@tir.com>

I have 5 6ah gel cells available. They are 3-4 years olds but have been load tested and check good. Removed from burglar alarm systems and replaced with new ones as preventive maintenance. Anyone who has bought from me before knows these are good cells and are super for powering QRP rigs.  
\$12 each plus shipping.

Email me for me info and leave your zip code also and I can tell you exactly what shipping will be via UPS.

--  
Tim

Certified Engineer of Fire Alarm Technology  
Amateur Radio Station: WB80GM (since 1972)  
Email: dx@tir.com  
Voice Email: dx@tir.com

"Sometimes imagination is better than knowledge"

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Jim Eshleman <lujce@hooch.cc.lehigh.edu>  
Subject: [8103] HamCalc version 17  
Message-ID: <96May3.112202-0400edt.65654-18193+12@hooch.CC.Lehigh.EDU>

Gang,

Thanks to LB, W4RNL, HamCalc version 17 (the most recent version) can be had via:

<ftp://ftp.lehigh.edu/pub/listserv/qrp-1/tools/hcal-17.txt>  
<ftp://ftp.lehigh.edu/pub/listserv/qrp-1/tools/hcal-17.zip>

Don't forget HamCalc is not freeware. The Author asks that you send a donation to the Canadian National Institute for the Blind Amateur Radio Program (CNIB ARP) c/o the Author. Details are in the package.

Stay tuned for further developments re: HamCalc...

73  
Jim N3VXI

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Dick <Dick@kanga.demon.co.uk>  
Subject: [8089] Introducing QRP, new book  
Message-ID: <pbBipBA64mhxEwQk@kanga>

Hi gang,

Ref        new book        \*Introducing QRP\*

Well, at last got the book from the printers, it looks good.  
Pale blue cover and 9 photo's included.

As promised it will be available at the 4DIM Thursday at the special price of \$8, if you are not booked at this event this price will be \$10. AND it will ONLY be available during the morning Coffee break and Lunch. Unless I can leave them with someone really trustworthy (I know what hams are like HI)

We leave for the Arena to set up the booth after lunch!

Sob weep, cry. Oh woe is us, what will we be missing ???

Back to the book....

Rob Mannion (he of large body and one arm - G3XFD)  
Also Editor of UK Practical Wireless Magazine wrote:

"This book will become a QRP classic"

What more could I ask for.

See you there..

PS, Richard, yours is booked

TTFN de ...

Dick Pascoe G0BPS / G0R00

Please send replies ONLY to: Dick@kanga.demon.co.uk

Kanga Products The UK's leading supplier of QRP kits.  
<http://ukinternet.com/ham/kanga>

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Tim Pettibone <tpettibo@nmsu.edu>  
Subject: [8139] K5FO vs. AB50U  
Message-ID: <199605032238.QAA24372@NMSU.Edu>

Well, I cheerfully accept el jefe's conceding (that's concede not conceed - darned techno-nerds, never can spell!) But I will point out that while Chuck is correct, I was high Q entry for NM during this past SS, I was also the only NM SS Q entry. I've gotten quite a collection of 1st, 2nd or 3rd places in many contests, qrp, by taking the trouble of sending in my entry. Shoot, now the cat's out of the bag, I'll have to really get good at operating. See you all on 30m. This stuff is fun, even with a rain gutter antenna!

Tim  
AB50U TMPS 1996 Qs=004 States=03 Confirmed=00 DX=01  
AR CA WA and BC

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: rdkeys@csemail.cropsci.ncsu.edu (by way of torell@sicom.com (Kent Torell))  
Subject: [8129] Lamb bulb resistances for experimental use  
Message-ID: <v02130500adb01246adce@[192.91.202.41]>

Old boat-anchor Bob posted this on the glowbugs list. He uses lightbulbs  
in his battery chargers also, similar to what is being discussed here....  
ab7oa

-----  
Another treasure surfaces from the deep dark recesses and bilges.

-----  
TABLE OF TUNGSTEN LAMP RESISTANCE VALUES  
-----

(Note: the original source for this is long lost, but it  
has ``Popular Science Monthly Shop Data'' written on the  
xerox that it came from.)

Lamp Wattage	Approximate Resistance in Ohms				
	Cold	25%	50%	75%	100%
-----	-----	-----	-----	-----	-----
6	193	1390	1837	2127	2400
10	113	822	1094	1293	1440
15	73	540	722	856	960
25	42	318	427	509	576
40	25	173	253	299	360
50	21	141	206	241	288
60	17	117	171	201	240
75	12	98	136	154	192
100	10	77	104	116	144
150	7	48	69	84	96
200	5	36	51	62	75

Note: Percentages are in percentages of 120vac applied  
across the bulb while it is used as a series resistor.

Looking at the table, one can easily see why a 200 watt lamp makes such a good dummy load for the average coax fed rig --- it is within the 30-100 ohm range at all output powers. Also, at MF and HF, the inductance and series effects of using a coil in a filament as a resistor are essentially nil. For open wire feeders, choose a power and resistance rating for your rig and open wire impedance 300-600 ohms.

Using such a table, one can easily use lamp resistances as series current limiters for battery charging, etc. In my chargers, they drop about 24 volts to a 6 or 12 volt battery, so I use the 25% column, and it works quite well. Also, series lamps make great bleeder loads when run at about 25 percent power or so, and it will stabilize your power supplies on OT rigs, quite well. 4 watt christmas tree lamps or 7.5 watt night lamps work quite well in this vein, for light loading and 10 or 15 watters work well for heavier loading. Use one bulb for every 60 volts of HV to bleed (Yeah, I know that is a lot of lamps, but they sure glow nicely and keep the shack warm in winter!).

The basics of the use of lamp bulb resistances are well covered in two QST articles, suitable for all amateur, and especially all boatanchorite and glowbuggite uses.

1. Redgrave, D.C., KA1NA. The light-bulb resistor. QST, March, 1934, pages 36-37.
2. Hamburger, F., Jr., W3AMM. The incandescent lamp as a resistor. QST, July, 1934, page 31.

Good Luck

73/ZUT DE NA4G/Bob UP

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "Kerry W. Miller" <kmiller@flash.net>  
Subject: [8084] Late QRPTTF report  
Message-ID: <1.5.4.32.19960503034201.00676dfc@mail.flash.net>

Ok, here's the report from East Texas.

Operators were:

Micah Brown, N5BTH and Kerry Miller, WD5ABC. We operated under the call





Subject: [8098] LED Metering (Thanks)  
Message-ID: <199605031441.HAA01881@nccn.net>

You all are great. I've been on the road and came back to discover not less than six copies of the article in the snail mail, four offers of faxes, and three kind souls who e-mailed me the postscript file of the article.

What a country!

73

Grover

```
*****
*****
* Grover Cleveland WT6P
* wylde@nccn.net *
* Sr. Training Engineer
* WT6P *
* Grass Valley Group/Tektronix
* 71213.2741@compuserve.com *
*
*
*                               "Sorry - Windows made me this way."
*
*****
*****
```

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Mike Robinson <miker@cc.com>  
Subject: [8102] Misc.  
Message-ID: <9605031521.AA11342@voder.nsc.com>

- 1) I missed something somewhere, what is TMPS?
- 2) My friend has finished his OHR Sprint on 40m.  
The audio out is quite low, has there been any discussion of a similar problem? Would adding a 10uF cap across the 386 chip boost the audio?
- 3) I sense a simulated emergency coming...

=====  
NCARC Superfest, June 1st, Larimer County Fairgrounds, Colorado  
=====  
7.3 de Michael AA0UB            miker@cc.com            michael@frii.com  
                                 http://www.frii.com/~michael  
                 QRP-L #126            Norcal #857            CQC #180  
=====

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Jeff Gold <JMG@tntech.edu>  
Subject: [8105] OHR 400  
Message-ID: <01I49L6NA6KY9ASD9A@tntech.edu>

a number of people have been asking about specs for the OHR 400  
qrp rig I advertised:

Specifications:

80-40-30-20 meter bands

Receiver  
RF pre-amp  
Diode ring mixer  
selectable AGC-manual gain control  
4 pole crystal ladder filter  
selectable 4 pole audio filter  
very stable VFO  
VFO covers 150Khz each band  
RIT +/- 1Khz

Transmitter  
4-5 watts all bands  
adjustable from rear panel 0-full power  
smooth QSK circuit  
sidetone generator with level adjust  
both iambic and manual key jacks  
alignment tool is provided with kit

Optional Iambic Keyer kit

72, Jeff

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Larry East <LVE1@inel.gov>  
Subject: [8120] RoPS Parameter Info  
Message-ID: <2.2.16.19960503175248.25bf77e8@134.20.32.17>

The following info may help you in using the RoPS "PostScript"  
viewer/printer program (available from the QRP=L FTP site):

If you experience multiple document pages overlapping each other when the  
file is read by RoPS, un-set the "make index" option (in the Edit/Options menu).

To change the paper size from A4 (the default) to US 8.5x11, make the  
following entries in the rops.ini file (in your windows directory) in the  
[framebuffer] section of the file:

```
WidthMM=8.5 25.4 mul  
DepthMM=11 25.4 mul
```

You will also need to establish your printer resolution. If you are using a  
300dpi printer, add to the same section of rops.ini:

```
LPI=300
```

If the printed image cuts off at the top, bottom or side of the paper, then try

```
LPI=290
```

For a 150 dpi printer, set

```
LPI=150
```

etc.

You might also want to play around with the "ScreenFreq=" setting to get the  
best images on your screen and printer.

Here are rops.ini entries that work for me:

```
[rops]  
colour=0  
antialias=1  
filter=1  
structure=0  
vmsize=4000  
pathsize=5400  
screensize=2000
```

imbufsize=6000  
screenSize=600

[framebuffer]  
ScreenFreq=56  
LPI=290  
WidthMM=8.5 25.4 mul  
DepthMM=11 25.4 mul

There are other entries not shown...

Yes, RoPS is slower than molasses running uphill in January, but it will print PostScript files and does not (quit...) require a full-time computer nerd to get working!

72, Larry.

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: [8106] Test/Lab Equipment  
Message-ID: <199605031550.PAA08960@chuck.dallas.sgi.com>

Gang,

If you were ask me a question about how expensive QRP operations are and the equipment I'd have to ask you just what do you want to do.

This is over simplified and will probably start YAT (yet another thread), but so be it.

1. You could buy all your stuff and just operate QRP. Mileage may vary. If you go high dollar commercial equipment and antennas then you could spent quite a bit of disposable income (that money which you and others let you allocate for hobby "stuff").
2. You could buy one or two kits and assemble them with just a few tools and then if problems and alignment needs to be done with freq counters, o-scopes, etc. then you can find a local ham/elmer/friend/friends/committee etc. to get the job done and you are on the air. The kit suppliers usually have a fee that if you send the rig back to them they will adjust it to specs. Quite a bargain in time and money.

3. If you like to build lots of kits/experiment/play/have fun/ and in general learn a lot more, then you can spend more on test equipment and tools than you have invested in a NC40a or whatever.

So let's start out on a series of postings about test equipment.

The first thing that you have to be able to measure is voltage, current, and resistance. How much do you trust your little critter that you bought from Radio Shack, a used meter at a ham meet that you don't know how far it's been dropped or how much power it was supplied internally, or wherever?

Here is a way that just might get you going towards precise and accurate measurements (and there is a difference between the two words).

During Desert Storm II, Riley NM, I got to peak at Paul Harden's new book "Electronic Data Book for Homebrewer's and QRP'ers". Available from 5 Watt Press (cute Rich :- ) , 740 Galena St., Aurora, CO 80010-3922, fax (800) 344-0740, email QRPBOOK@aol.com and will sell for \$17.50 until August 31, 1996 just at the end of the Thirty Meter Propagation Study (TMPS). After that it will be \$23.00 (19.50 DX before Sept 1 and \$25 after). These prices include postage.

Someone in the last NorTex meeting mentioned that it's just a databook. Well, it's more than that. I personally don't have the resources or the time to go look all this stuff up in about 30 different places. Paul has done all the work for me and I thank him.

Anyway, he had something that I didn't know about. "Reference Diodes". There is a LM385-1.2 with a Z model being in the T0-92 case (plastic). Here are the specs

1.23 +/- 0.01V 20ppm long term stability

I picked up two at Tanner's here in Dallas for \$1.49 each plus some taxes for DART and the great state of TX. I picked up another two for 2.5V, but haven't tested them yet. Gotta save something for later.

This morning, in 15 minutes before shoving off for work I did the following measurements on both and using the meters shown.

I used a 12K and a 10K in series with the diode to see if

current variations affected the voltage. No change. Good news. Supply voltage was 12.75V from 4Ahr Gel-Cell.

Part	Circuitmate DM73 22-191 (R/S)	Micronta Digital Auto-Range DM	Radio Shack 22-163
LM385Z-1.2 (#1)	1.215V	1.215V	1.221V
LM385Z-1.2 (#2)	1.238V	1.238V	1.243V

So the meters are within 0.5% of each other, that's good.

The diodes are within 2% of each other, that's bad. Well not too bad, but I would like to have seen closer tolerances.

What this means if I'm measuring for 0.95W and I'm off 2%, I could really be between 0.99W and 0.91W. I can hear you hollering without a radio!! Chuck Adams has gone crazy with his math!!! 2% variation of 0.95W should yield a range from 0.93W to 0.97W is probably what some of you are saying. But remember we are measuring voltage and the power is dependent upon the voltage squared. A big surprise to some people, but hey if you aren't learning something everyday then you are standing still.

Now you can see why I picked 0.95W, it's on the hairy edge of being QRPp both in measurements and upper limit of the power range.

The Circuitmate DM73 is about \$80 or so and the R/S meters I got at two different swapfests on an impulse (you know what I mean, this is a close-out deal at this meet only and you too can get such a deal - every shack and workbench needs one of these puppies). The Circuitmate I'd trust more than the others, but the others aren't looking too bad for the money. You don't have to tell me or anyone else, but I bet we pretty much have all bought connectors, parts, meters, and we have a closet or garage with some project yet to be done or parts that just might come in handy some day. :-)) Been there done that. Been there gonna do that.

What's the purpose of this? Probably none, but I'm still looking for a voltage source that is more precise and accurate and doesn't cost an arm and a leg. People have suggested a mercury battery, but heck if I can find such a critter and if I could I'd buy three of them at least and see what variance I'd get. Anyone done this? Surely someone has. Any NorCal members at the meeting this Sunday and have a solution holler at me. I'll be there. And those in the know can give me mfg and part number for the battery, like a watch battery or camera, I'll look for 'em.

While in college we had National Bureau of Standards traceable standards in the lab to calibrate everything. As a ham we don't

have that kind of equipment available (well, most of us don't).  
I really don't need that kind of accuracy but it'd be nice to get  
close, say 0.5% or better.

Now if we can trust our voltage measurements, we can get the rest of  
the measurements we need from this. This I will do with followups  
over a period of time interspersed with other topics and interests. :-)  
This topic is important to QRP measurements and just how well we  
did on the OHR WM-1 alignment.

dit dit

--

Chuck Adams (K5FO CP-60) adams@sgi.com  
K5FO Tmps 1996 Qs=009 States=07 Confirmed=00 DX=01  
AZ CO IN MI SD UT WI

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: tmh@world.std.com  
Subject: [8118] The Iso-rad Display (long)  
Message-ID: <Pine.3.89.9605031356.A2513-0100000@world.std.com>

I've been trying to visualize HF propagation. To help I've been  
imagining something I call the "Iso-rad Display."

This is a gizmo that display a world map on your PC, with your QTH at  
the center. Overlaid on this map are "iso-rads." These lines of equal  
signal intensity from a hypothetical transmitter at your QTH that sends  
out an isotropic (i.e. equal in all directions) radio signal. Each  
iso-rad corresponds to a different power level, i.e. there's a .001 watt  
line, a .01 watt line, a .1 watt, a .5 watt, etc. then say one for each  
10-watt increase in power up to 1500 watts. (The different power levels  
chosen aren't really important, so long as you have enough displayed all  
at once so the map has lots of contours on it). (Note: If there's a  
real name for these 'iso-rads' I'd like to learn it).

My question is: What would the iso-rad display look like? How would  
different propagation features and conditions affect it?

GROUND WAVE: Now around your QTH I guess there would be a series of  
concentric contours, of increasing power. So if you think of the  
iso-rad display as like a contour map, your QTH is the summit of a  
mountain, with contours around it. The closest in is the .001 watt, then  
the .01 watt, etc. up to 1500 watts.



SKIP ZONE: Beyond this QTH-mountain I guess there would be a skip zone, a zone of no contours-- nobody can hear you. Then, beyond that, there should be a 1500 watt contour where someone just on the outer skip zone-edge can hear you if you transmit with 1500 watts. Then beyond that contours of decreasing power, down to some minimum, then, increasing power again. So, using the topographical map-analogy, the skip zone would be like a ring-shaped island (like an atoll) around your QTH, with the QTH itself an island in the center (the ground wave). Questions: How symmetrical would this zone be? How would it change with time? Would it even be roughly circular, or amoeba-shaped? Would there be any jagged, sharp corners?

GRAYLINE: I've heard that signals travel better along the grayline, so how would this look? Would it distort the annulus-shaped skip zone into a long lonzenge?

OPENINGS: Last night there was an opening on 20m from here in Massachusetts to Costa Rica. So I guess this would appear as an island or mountain over Costa Rica: a bunch of concentric contours, with nothing around it, and with the outermost contour being 1500 watts. Anwhere inside that contour your 1500 watt signal would be heard. Inside it would be contours for decreasing power levels, down to some minimum. What shape would these openings be on the map? Roughly circular? How would their shape be affected by changing conditions, such as the moving grayline?

CLIFFS: If iso-rads are bunched up on the map, that means that increasing your transmitter power will only give you a small increase in distance. Again using the topo-map analogy, this would look like a cliff. Questions: how radially symmetrical are these cliffs around your QTH? If conditions are good, I guess any cliffs will be far away, and, will be confined to small sectors of the compass. If conditions are bad, presumably they'll close in. Are there occasional cliffs as you move out from your QTH in one direction? These would represent points where more power doesn't get you very far, but with enough power you 'break through'-- do these features exist. How would these ebb and flow with improving/degrading conditions?

PLAINS: Areas where a little more power would give you alot more distance, would look like plains, with the contour lines widely spaced. Now some questions are: Are there ranges of power-level which get you out further than other ranges? I.e. will going from 1 to 100 watts increase your distance more than going from 1000 to 1500 watts (my guess is yes). So, what are these 'most efficient' power levels, that get your the furthest across the plain? Are they the QRP levels?

Anyway. I find this kind of imagining fun and thought I'd share it. I'm particularly interested in how a display like this would change over

time. Was that opening to Costa Rica like an island, rearing up out of the sea, or, was it like a plain that shot out from near me to just touch Central America?

Tim Huntington  
N1PAZ  
tmh@world.std.com

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: TIMOTHY J PETTIBONE <tpettibo@NMSU.Edu>  
Subject: [8085] TMPS  
Message-ID: <Pine.A32.3.91.960502215948.73233A-100000@hector>

Hey Chuck, I'm catching up. Had a real marginal qso with a K6. Then hooked up with WB5CQK in Arkansas. He's ARCI 9076 but was running 50W. Could barely hear me. I ran outside, pushed a wire through my 'thru-the-wall' and bolted it to a vertical section of rain gutter. Loaded it up with the MFJ 949D. I jumped from 329 to 569 in Arkansas. Noise level went way up (the gutter is about 3 feet from the main TV set in the living room). So much for the !@#\$\$ GAP Titan on 30m. Rag chewed for 36 minutes with Nate (while the rest of you ran your typical contest type exchanges!) Now am looking for the R1 that some of you including N00CT heard and worked last nite. May be a bit late, don't hear any sigs on 30m any more. Oh well. A good spurt with my rain gutter and I'll catch up with that old Chuck.

Tim  
AB50U

TMPS 1996 Qs=002 States=02 Confirmed=00 DX=00  
AR CA

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Roger Hightower <aa7qy@dancris.com>  
Subject: [8107] TMPS  
Message-ID: <199605031552.IAA20235@dancris.com>

Lots of activity on 30M last night, abt 0600Z 5/3. Worked K5AHE, Pat in Baton Rouge.

Heard AB7MY, AA7FL, W5ou in qso's. Tried answering WA9PWP's CQ, but he picked K20PJ instead. Also heard JH2CLV calling CQ, but he couldn't hear me answering.

72/73, de Roger AA7QY

TMPS 1996 Q's: 1 States: 1 Cfmd: 0 DX: 0  
LA

NorCal 1099 CoQRP 176 QRP-L 62 G-QRP 9081 ARCI 8946 NE-QRP 383

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "'AB7HI' Stephen Lee" <slee@u.washington.edu>  
Subject: [8086] TMPS and more  
Message-ID: <Pine.A32.3.92a.960502214945.40596B-100000@homer14.u.washington.edu>

Hey Tim...my GAP Titan is still disassembled. Had a few visits from the covenants committee this past winter so decided to lay low with the GAP. Might take down the ground mounted Butternut and put up the GAP just to compare the two. Will let you know when/if that happens.

Last night I used the QRP Plus at 5 watts and QSO'd with KF1S/6, Pat in Pearblossom, CA; KD0SU/QRP, Rick in Colorado Springs, CO; W5VB0/QRP, Brian in Peoria, AZ. Brian's signal was so strong here that I thought he must be one of the Tacoma locals. Was I pleasantly surprised...and then we had a nice long chat to boot. Thanks Brian!!!

Tonight on 30 meters I was using the original QRP Explorer at 2.5 watts. When the band is good this rig just goes!!! Made contacts with W6TQG, John in South El Monte, CA; AA8QH/QRP, Pat in Cleveland, OH; W0SZF, Verle in McCook, NE. Pat was using a QRP Plus and this was definitely very weak signal work between us. Verle reported strong QSB then signed off. Right as he was signing off we got hit with an earthquake of magnitude 5.3. So here I am, rocking and rolling with the house while trying to get Verle back, hi hi.

Having a genuine good time!  
Stephen Lee, AB7HI  
TMPS 1996 Qs:006 States:05 Confirmed:00 DX:00  
AZ,CA,CO,NE,OH

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: BWHITTEM@mailgw.sanders.lockheed.com

Subject: [8121] tmps de wb1edi

Message-ID: <18a48600@mailgw.sanders.lockheed.com>

band sounded good in nh last night. first shot in a while to get on. worked w4nti in al. and n9vxz in wi both 559 549 with qsb bad at times. was using ic 706 @ <5 into indoor dipole with 300 ohm twinlead es mfj tuner. called cq a few times but no answers. see you all there when i can.

barry

wb1edi

TMPS 1996 Q's: 2 States: 2 Cfmd: 0 DX: 0

AL WI

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996

From: meh@cbsms1.cb.att.com (m.e.hartwell)

Subject: [8124] Vacation in Ontario

Message-ID: <199605031811.0AA22945@emsr1.emsr.lucent.com>

Hi Gang

I know this is short notice but if you have any information I can use please respond to my email address below, I will be monitoring in the evening while I am away. I will be in London Ontario Monday I think, at least somewhere around there. Is there any stores that cater to the ham in that vacinity? On the same note anyone in and around London that cares to meet for lunch and conversation I will have my two meter handheld with me, what is a good frequency to monitor/use while I am there?

I will bring my 30 meter qrp rig too, maybe will be able to find a park to try a small field day of my own.

Marty kd8bj

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996

From: Mike Robinson <miker@cc.com>

Subject: [8133] Vanity calls

Message-ID: <9605032031.AA24721@voder.nsc.com>

The unused 1x2 and 2x1 callsigns can be downloaded from my home page.

Also, I have the list here e-mail-able. If you can't download it, I can e-mail it to you. Caution: It's long.

```
=====
TMPS=0001   OR
=====
NCARC Superfest, June 1st, Larimer County Fairgrounds, Colorado
=====
7.3 de Michael AA0UB      miker@cc.com      michael@frii.com
      http://www.frii.com/~michael
      QRP-L #126      Norcal #857      CQC #180
=====
```

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "David Kreinberg" <kreinbd@ccgate.dl.nec.com>  
Subject: [8119] VANITY(FLOOD)GATES OPEN!  
Message-ID: <9604038311.AA831152250@smtpgw.ccgate.dl.nec.com>

Gang:

Just read off the ARRL BBS that Gate 1 of the  
Vanity Call system will begin May 31! That's  
much sooner then I expected.

Guess all the petitions to the FCC have been  
handled.

BTW - For those of you who may not know, Gate 1  
allows the owner of a previously held call to  
get that old call back. Also, if you have a  
deceased family member, you may apply to get  
their old call.

Now when Gate 2 opens, things will really get  
weird. People will be getting all sorts of calls  
with all sorts of call areas. It'll be harder then  
ever trying to figure where somebody's calling from!

Though you all might want to know.

73 de Dave AC5GY

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Glen Leinweber <leinwebe@mcmail.CIS.McMaster.CA>  
Subject: [8113] voltage reference calibration  
Message-ID: <1996May03.130508-0400@[130.113.234.7]>

Chuck brought up the subject of metrology - calibrating  
your measuring instruments.

Heath used to recommend a fresh 1.5 volt cell to  
calibrate their voltmeters. You can probably do better today.  
A more accurate buried-zener reference diode  
thats similar to the LM385-2.5 is the LT1009  
It has 0.2% initial tolerance instead of 1% or 2%  
..available from Digi-Key.

Many of the cheap three-and-a-half digit  
multimeters are based on the 7106 single-chip analog-to-  
digital converter. Its made by a lot of semi manufacturers.  
Its really a beautiful piece of engineering.  
I have checked the linearity of these things and found  
that they're incredibly good.

Included in the "standard circuit" is a calibration  
pot. So if you open up the meter and see a little pot in  
there, chances are you can use it to calibrate your meter  
against a good voltage source (like the LT1009).

So you'll end up with a meter who's accuracy is  
as good as its precision, at least on the one scale that  
you calibrate.

Glen VE3DNL

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "David D. Meacham" <ddm@datatamers.com>  
Subject: [8136] Voltage References  
Message-ID: <Pine.LNX.3.91.960503150718.4657B-100000@dt1.datatamers.com>

Gang,

Interesting thread, and some good info. I'd like to point out that many  
Digital Voltmeters have a basic accuracy (on DC voltage) of 0.1% + one  
digit, even my old Simpson 463. So what will you calibrate with a 0.2%  
reference? Analog voltmeters would be good candidates, but not DVMs.

72, Dave, W6EMD, Redwood City, CA

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996

From: "Brian.Buydens@usask.ca" <buydens@duke.usask.ca>  
Subject: [8108] Windom antennas  
Message-ID: <Pine.OSF.3.91.960503095429.13513B-1000000@duke.usask.ca>

Earlier I posted a message regarding an antenna from a recent issue of QST which was similar to a winwom design. It has a characteristic impedance of 300 ohms and the author used ladder line for the transmission. I am told this line is rare in North America. What I was planning instead is to install a balun at the antenna and reduce the impedance to 50 ohms.

Comments?

```
+-----+
| Brian Buydens, Computing Services, University of Saskatchewan      |
| email: Brian.Buydens@usask.ca                                     |
| VE5RDV                                                            |
+-----+
| Albert Einstein, when asked to describe radio, replied: "You see, wire |
| telegraph is a kind of a very, very long cat. You pull his tail in New |
| York and his head is meowing in Los Angeles. Do you understand this?   |
| And radio operates exactly the same way: you send signals here, they   |
| receive them there. The only difference is that there is no cat."      |
+-----+
```

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Price\_Joe/nsih1\_RICHARDSON/alcatel/US/Telemail/  
alcanet@audopen.aud.alcatel.com  
Subject: [8126] Yaesu/Icom Help  
Message-ID: <H00004a202464141@MHS>

Thanks, all!

Since I posted a request earlier this week, I've received over a dozen responses, covering all I asked. There was a good agreement among the answers, too! Also included were at least three invites to NORTEX QRP'er's meeting tomorrow. I must go! Y'ALL ARE GREAT!

Soon, wire should be up, and I'll be certified dangerous!

TNX & 73's,

Joe            WA5UNK    ARRL Life  
QRP-L #476    NTRAK    NCAT

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Paul Stroud <aa4xx@nando.net>  
Subject: [8142] [Fwd: 80 Meter Net]  
Message-ID: <318AA87B.4B2C@nando.net>

Message-ID: <318A9C34.67BA@nando.net>  
From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Paul Stroud <aa4xx@nando.net>  
Subject: 80 Meter Net

Dear gang,

The Knightlites QRP Group invites you to check into our laid back 80 Meter net each Sunday night at 0200 UTC (10PM EDT) on 3710 KHz. The net protocol has evolved over the last few months, with the intention of balancing a reasonable time schedule against the desire to provide an opportunity for each check in to share a few comments with the net. This net is open to all amateurs, running either QRO or QRP.

The protocol is as follows: The Net Control Station sends "CQ KnightLite's Net, QNI K." Stations wishing to check in then send their call ONE TIME, checking-in in groups. After no more calls are heard, the NCS acknowledges each check in and asks them to wait while the above sequence is repeated three or four times, or until no other check-ins are heard. The NCS then starts at the head of the list, asking for brief comments concerning, rig, power, antenna, etc. Additional stations may feel free to check in during any pauses that are intentionally provided by the NCS. The NCS will also periodically call for additional check ins during the Roundtable part of the net session. This revolving door approach maintains flow and ensures that new stations have ample opportunity to check in as the net progresses.

The nets often go on for 45 minutes or more, but HEY, our purpose is to promote the fun of operating and to encourage as many folks as possible to join in the fun--not to strive for strict time management. Those who can't stick around for the duration are free to check out (QNX) at any time.

The KnightLites are spread over a wide geographical area, with stations checking in from several call areas, including VE3 Land. We hope you'll consider joining us one Sunday night!

Here's the QNS report for last Sunday, April 28th:

AC4QX	Lauren	Lake Gaston,	NC	579	T.T. Delta II
					3 Watts, G5RV



AE4AZ	Ray	Hendersonville,	NC	459	T.T. Omni C 30 Watts, Longwire
KC4URI	Steve	Ashland,	VA	589	T.T. Argosy 5 Watts, Dipole
AA6UL/4	Ralph	Charlottesville,	VA	449	OHR "HP" 2 Watts, Low Dipole
KB2ELS	Mark	Greensboro,	NC	349	KNWD TS-430 10 Watts, Dipole
K2YEW	Norm	Oceanside,	NY	449	5 Watts
WA4SGC	Mac	Clarkton,	NC	449	T.T. Argosy 5 Watts, 160M Flatop
KS4VX	Roger	Pittsboro,	NC	449	4 Watts, G5RV
WJ9B	Will	Greensboro,	NC		
N3GO	Gary	Raleigh,	NC	459	1 Watt, Dipole
KF8EE	Ted	Loveland,	OH	449	5 Watts, 120' End Fed
N1WJL	(Had to QNX)				
WU2K	Art	Lake Grove,	NY	339	5 Watts, QRP +
AA4XX	Paul	Raleigh,	NC	(NCS)	5 Watts, Inverted Vee FT-757GX

I'd like to thank Ralph, AA6UL, for acting as NCS two weeks ago. Ralph has been burning up 80 Meters as of late, with his "80-9er." Nice job, Ralph! Also, a hearty welcome to first-timers K2YEW, N1WJL, and WU2K. Looks like Ten-Tec rigs abound in QRP circles!

72,  
Paul AA4XX

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
 From: adams@chuck.dallas.sgi.com (chuck adams)  
 Subject: [8111] Re: CCW Library  
 Message-ID: <199605031627.QAA09185@chuck.dallas.sgi.com>

Tom et.al.,

I get an IP address of 168.143.0.3.

This is for those that have problems with DNS on the super-info-highway.

--

Chuck Adams (K5FO CP-60) adams@sgi.com  
K5FO Tmps 1996 Qs=009 States=07 Confirmed=00 DX=01  
AZ CO IN MI SD UT WI

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: JEVERHART@cayman.vf.mmc.com  
Subject: [8114] Re: Club Membership for VE3DDY  
Message-ID: <960503131200.24a05d66@carib.vf.mmc.com>

Mike,

You queried, in part:

>Everyone -- can I publish your descriptions of QTTF on the web page?

Feel free to publish mine. BTW, I've had a number of Joe's Quickies" and other articles printed in the QRP Quarterly and 72. If I get permission from them to post the articles on our web page (assuming, of course that you want them), how can I get them scanned in?

72/73,

Joe E., N2CX

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "Ahlgren Jukka (NTC/BS-0U)" <Ahlgren@ncsbsr02ou.ntc.nokia.com>  
Subject: [8117] RE: Dave Benson's e-mail address  
Message-ID: <318A6E9B@ncsbsr01ou.ntc.nokia.com>

> Hi group,  
> Subject says it all. Misplaced it somewhere. Sent him a message with =  
> what I thought was the correct address, but no go...Anyone have it =

>handy?  
> Mike  
> NQ7K  
>

It is Bensondj@aol.com

Jukka OH6SC

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Monte Stark <ku7y@sage.dri.edu>  
Subject: [8101] Re: Delete key  
Message-ID: <Pine.SUN.3.90.960503075649.15944E-1000000@vortex.sage.dri.edu>

On Fri, 3 May 1996, Larry East wrote:

>  
> Any we wonder why our brothers/sisters in G-land think yanks run-off at the  
> keyboard too much??  
>

I would disagree.....this group seems to be able to handle a wide range of subjects, most of which connect with QRP in some way, without getting into flame wars! For this very reason I would encourage the open dialog.....while it can be tiresome at times, (for those of us that are not interested in that subject), most of the time we manage to learn a little something in spite of our best efforts!

I would much rather open my mouth and confirm the fact than remain silent and just be suspected! :-)

cul,

73, Ron,

.....KU7Y.....ARCI #8829.....Monte "Ron" Stark.....  
....ku7y@sage.dri.edu.....Washoe Lake, Nevada....  
....QRP-L #17....ARRL....NorCal #330.....NRA LIFE.....

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Paul Erickson <paul1@wizard.ucs.sfu.ca>  
Subject: [8123] Re: Delete key  
Message-ID: <9605031807.AA20025@wizard.ucs.sfu.ca>

>  
> On Fri, 3 May 1996, Larry East wrote:  
>  
> >  
> > Any we wonder why our brothers/sisters in G-land think yanks run-off at the  
> > keyboard too much??  
> >  
>  
> I would disagree.....this group seems to be able to handle a wide  
> range of subjects, most of which connect with QRP in some way, without  
> getting into flame wars! For this very reason I would encourage the  
> open dialog.....while it can be tiresome at times, (for those of us  
> that are not interested in that subject), most of the time we manage  
> to learn a little something in spite of our best efforts!  
>  
> I would much rather open my mouth and confirm the fact than remain  
> silent and just be suspected! :-)

Bravo Ron! Would that I had your skill in addressing the issue well  
without falling into the trap of taking myself too seriously.

cheers, Paul  
VE7CQK  
email: paul1@wizard.ucs.sfu.ca

>  
> cul,  
>  
> 73, Ron,  
>  
> .....KU7Y.....ARCI #8829.....Monte "Ron" Stark.....  
> ....ku7y@sage.dri.edu.....Washoe Lake, Nevada....  
> ....QRP-L #17....ARRL....NorCal #330.....NRA LIFE.....  
>  
>

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "L. B. Cebik" <cebik@utkux.utcc.utk.edu>  
Subject: [8144] Re: HamCalc version 17  
Message-ID: <Pine.SOL.3.91.960503213826.26827F-100000@utkux4.utcc.utk.edu>

On Fri, 3 May 1996, Jim Eshleman wrote:  
> Don't forget HamCalc is not freeware. The Author asks that you send a  
> donation to the Canadian National Institute for the Blind Amateur Radio  
> Program (CNIB ARP) c/o the Author. Details are in the package.

Slight modification here. Murph wants HAMCALC to be freely distributed with no mandatory strings attached. Hence, it is not shareware. So if you pick up a copy from the qrp-1 tool site, feel free to share a copy with a friend in need of the program collection.

At the same time Murph (VE3ERP) would love to break even for the cost of disks and postage. So if you would like to be added to his periodic update list of direct mailing or just want to say thanks for his continuing effort to expand the package and make it ever more useful, then please send him a donation--all amounts over his costs go to the program Jim described.

Version 18 is now out and will soon be coming to Jim for installation at the site. I have asked Murph to add Jim to his mailing list.

Unfortunately, Murph does not have e-mail connection in Orillia. But having worked with him for over a year now, I feel fairly confident I have expressed reasonably accurately how he feels about both sharing the program (do it) and donations (please, if you can).

And if you have access to any unencumbered programs in BASIC that might make good additions to the collection, send them up to Murph. He is always on the lookout for calculation programs to help other hams.

-73-  
LB, W4RNL

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: [8095] Re: HW-8 Offset Problem Fixed  
Message-ID: <199605031419.0AA08649@chuck.dallas.sgi.com>

John,

Thanks for the posting and how you solved it. This type of problem is not uncommon, even in commercial rigs.

But what I'd recommend is one other individual get involved. The third party listens to both of you and when both of you are transmitting on the same freq then you have solved the problem for sure.

For those that post that they go a long time and haven't worked anyone go back to John's post and see if you see how this problem may be happening to you. You learn and you could solve your lack of QSOs even though you have checked your rig and antenna many times.

— —

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Paul Harden <pharden@aoc.nrao.edu>  
Subject: [8128] Re: LT1009  
Message-ID: <199605031959.NAA11234@zia.aoc.nrao.edu>

For the T0-92 (LP Package):

(If you've got the DIP version, email me direct for pin-outs).

Reference voltage	...	2.50v	(2.490 to 2.510)	@25C
			(2.486 to 2.514)	over 0 to +70C
Adjustment range	...	125mV	Iz=1mA, Vadj= gnd to Vz	
		45mV	Iz=1mA, Vadj= 0.6v to Vz-0.6v	
Temp. coefficient	...	15 to 25 ppm		
Vz change w/ temp	...	5mV max.	over 0 to 70deg. C	
Long term drift	...	20ppm per 1000 hours		
Vz/Iz tolerance	...	2.6 to 10mV	with Iz=400uA to 10mA	
Forward Volt. Vf	...	0.4 to 1.0v		
Zener Impedance	...	0.3 to 1 ohms	(when zener action occuring)	
MAX reverse I	...	20mA		
MAX forward I	...	10mA		
MAX pwr dissipation	.	725mW	@25C, 464mW	@70C

To make an adjustable precision reference voltage from an LT1009 off +12v (or any reference diode):

Connect anode to ground. Cathode to 3-4K resistor to +12v (current limiter). Output at junction of resistor/cathode will be the +2.5v reference output. Place a 10K trimpot from ground to the +2.5v output, with the wiper going to the ADJUST pin. Full scale adjust of the 10K pot will trim output voltage by 5% (125mV).

(On a schematic, the zener "arrow" points away from ground to +V). The overall tolerance of the LT1009, operated within the environment of most QRPers, should be 0.2% over the temperature, input voltage and current range.

GL, Paul NA5N

PS - about \$2 item. If using DigiKey, order LT1009CZ (\$2.14)

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Paul Harden <pharden@aoc.nrao.edu>  
Subject: [8130] Re: LT1009  
Message-ID: <199605032018.0AA11867@zia.aoc.nrao.edu>

I wrote:

>They are a direct replacement for the LM136-2.5.

While that is true, I probably should have listed "LM336-2.5" the commercial version, or the number found in most hobby vendor catalogs. Almost identical specifications, except LM336 are 1% devices (LT1009 are 0.2%). LM336's are about \$1.50 for the sloppier tolerance (although still beaucoups better than a regular old zener).

Paul NA5N

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Mike Robinson <miker@cc.com>  
Subject: [8116] Re: Misc.  
Message-ID: <9605031733.AA16968@voder.nsc.com>

>

>

> TMPS = Thirty Metre Propagation Study (Mr. Chuck Adam's way of  
> encouraging qrp contacts on 30 m. from May until Sept/Oct)

>

>  
> Brien  
> Toronto  
> TMPS = 0 (too far north yet for good 30m. in evenings. Soon.)  
>  
>

Thanks Brien, don't know why I didn't see it.

```
=====
NCARC Superfest, June 1st, Larimer County Fairgrounds, Colorado
=====
7.3 de Michael AA0UB      miker@cc.com      michael@frii.com
      http://www.frii.com/~michael
      QRP-L #126      Norcal #857      CQC #180
=====
```

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Craig LaBarge <74740.3166@CompuServe.COM>  
Subject: [8141] Re: NE QRP AField Sept. 21, 1996, A Theme ??  
Message-ID: <960504003313\_74740.3166\_EHB92-2@CompuServe.COM>

> How about Yachts ?

Alright guys...now you got me thinking! I don't have a yacht, but a hamstick would look kinda neat on the back of my 10-foot aluminum jon boat. Might be interesting to operate /MM from the historic Schuylkill Canal here in Phoenixville, PA. Hmmm...if the band closes, the bass might be biting. :-)

73, Craig WB3GCK

WB3GCK TMPS QSOs 02 STATES 01 DX 01 CONFIRMED 00

From owner-qrp-l@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Price\_Joe/nsih1\_RICHARDSON/alcatel/US/Telemail/  
alcanet@audopen.aud.alcatel.com  
Subject: [8099] Re:QRPTTF Confession  
Message-ID: <H00004a2024479d1@MHS>

Bob,



'Tis written in the "Log of QRP", Chapter CW, Verse <5w, that

"OM's and XYL's shall not live by QSO's alone. They shall also have refreshivg diversions, such as ball games, dinner-out and movie dates with the spouse or significant other, play time with the GRAND (and other) kids, as well.

"Thus shall the QRP'er be a whole and complete member of the Amateur Radio Fraternity."

I'm glad you have been found in conformance. Keep up the good life.

Joe            WA5UNK   ARRL Life  
QRP-L #476   NTRAK   NCAT

----- Forward Header -----

Subject: QRPTTF Confession  
Author: owner-qrp-1 at SMTP/DD.RFC-822=owner-qrp-1@Lehigh.EDU  
From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: lhalliday@creo.bc.ca  
Subject: [8131] Re: RoPS Parameter Info  
Message-ID: <9604038311.AA831154832@mail.creo.bc.ca>

More from she who gets paid to do PostScript...

Useful values for screen frequencies come from the expression:

$$\text{resolution} * \text{sqrt}(2) / n$$

where n ranges from 5 to 10 or so for a 300 dpi printer. Useful screen frequencies at 300 dpi are 53 lpi (n = 8) and 71 lpi (n = 6). The sqrt(2) factor is the slant distance between halftone cells at a screen angle of 45 degrees, which is standard for black.

ObQRP (sorta): I got some pc boards for a 5 watt amplifier the other day. But it's 5 watts on 13 cm (2304/2320/2400 MHz) - the DC8UG design that was in VHF Communications 3/1994. Now to save my pennies for some power GaAsFETs, and I'll be ready for Phase 3D!

Laura Halliday VE7LDH  
lhalliday@creo.bc.ca  
ve7ldh@amsat.org  
Locator: CN89mg

"C'est une femme mutine, assez  
elegante, grave et legere, ayant le  
sens du confort et du plaisir  
en tout." - C. Deneuve

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: QLF@mimi@magic.itg.ti.com  
Subject: [8092] re: SIMULATED FIELD DAY  
Message-ID: <9605031333.AA03309@itg.ti.com>

From: Brad Bradfield QLF

Subj: re: SIMULATED FIELD DAY

> It is a little ironic that Field Day, an emergency preparedness exercise,  
> is usually planned for at least 6 months in advance ;-). It would be a  
> lot more interesting to have Field Day take place on a different summer  
> weekend every year, announced 24 hours in advance by the ARRL. This  
> would really test the emergency preparedness aspect, though it wouldn't  
> do much for the public relations part ;-).

> Dana  
> Dana.Myers@West.Sun.Com

Read a post-Field Day article in QST several years ago about a club in Iowa who did just such a thing. The only "known" about the event was that it would be on Field Day. The local Civil Defense folk were enlisted to "call them out" to a sight unknown for simulated emergency reasons unknown. From this location they would proceed to set up and operate Field Day.

The sight they were sent to was in a corn field. Sometime after setting up they were drowned with torrential rain storms, and they were soon up to their butts in mud. Whatta mess! Seems like it took them several days to get some of the vehicles out of the mud.

73's

Brad, WB0CGH

\*\*\*\*\*  
Brad Bradfield, PE Electrical Design Engineer  
(H) 817-321-2960 Texas Instruments, Inc.  
(W) 214-462-6230

QLF@MSG.TI.COM

WB0CGH@W05H.#DFW.TX.USA.NA

ARRL Life Member QRP-L #377 SMIRK #4906 IEEE(M)  
Collector of wireless and landline Morse keys and accessories.

\*\*\*\*\*

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Bernard Seront <seront@seism1.ess.sunysb.edu>  
Subject: [8115] Re: Test/Lab Equipment  
Message-ID: <2.2.32.19960503051700.009588b0@seism1.ess.sunysb.edu>

At 03:50 PM 5/3/96 GMT, you wrote:

>  
>What's the purpose of this? Probably none, but I'm still looking for a  
>voltage source that is more precise and accurate and doesn't cost an arm  
>and a leg. People have suggested a mercury battery, but heck if I can find  
>such a critter and if I could I'd buy three of them at least and see what  
>variance I'd get. Anyone done this? Surely someone has. Any NorCal  
>members at the meeting this Sunday and have a solution holler at me.  
>I'll be there. And those in the know can give me mfg and part number  
>for the battery, like a watch battery or camera, I'll look for 'em.  
>  
>While in college we had National Bureau of Standards traceable  
>standards in the lab to calibrate everything. As a ham we don't  
>have that kind of equipment available (well, most of us don't).  
>I really don't need that kind of accuracy but it'd be nice to get  
>close, say 0.5% or better.  
>

Mercury batteries are still available in some european countries I think. We are less concerned for mother earth there!

In the lab, when we need a precise voltage source we use the REF10 from Burr Brown. It's a 10.00V reference,  $\pm 0.005V$ , 1ppm/ $\approx B0C$  drift (0-70 $\approx B0C$ ), 10 ppm/1000hrs stability; power supply is 13.5 to 35V.

The REF101 is basically the same 10.00V ref with a pair of internal matched 20K resistor, that lets you build a 5.00V reference.  
There is a full line of V and C references from Burr Brown (REF01, REF02, REF05, REF102...).

Check their web server for more information and data sheets in pdf format:  
<http://www.burr-brown.com/>

Usual disclaimer apply for Burr Brown.  
I am very satisfied with their products though, and they are well regarded in the academic world (high quality, reliable, fool proof).

Bernard, KB2TGH.

-----  
Bernard Seront, seront@seism1.ess.sunysb.edu

<http://rock.ess.sunysb.edu:8080/>

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: [8097] Re: TMPs  
Message-ID: <199605031439.0AA08787@chuck.dallas.sgi.com>

Rick,

The principle of reciprocity says that if he can transmit in a direction  
well he can hear well also.

We'll get him yet. I spent 45 minutes trying to get him. He kept moving  
probably because of all the QRPers ganging up on him.

Joe, AL7IK, is now a famous guy. :-)

dit dit es gl to all

--

Chuck Adams (K5FO CP-60) adams@sgi.com  
K5FO TMPs 1996 Qs=009 States=07 Confirmed=00 DX=01  
AZ CO IN MI SD UT WI

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: Kevin Muenzler <wb5rue@amsat.org>  
Subject: [8100] Re: TMPs  
Message-ID: <01I49JW4APQ2005AUD@ARWEN.UTHSCSA.EDU>

On Friday, May 03, 1996 9:39 AM, chuck adams[SMTP:adams@chuck.dallas.sgi.com]  
wrote:

>Rick,

>

>The principle of reciprocity says that if he can transmit in a direction  
>well he can hear well also.

Not necessarily! I've seen one-way-skip many times.

>

>We'll get him yet. I spent 45 minutes trying to get him. He kept moving  
>probably because of all the QRPers ganging up on him.

>

>Joe, AL7IK, is now a famous guy. :-)

>

>dit dit es gl to all  
>--  
>Chuck Adams (K5FO CP-60) adams@sgi.com  
>K5FO TMPS 1996 Qs=009 States=07 Confirmed=00 DX=01  
>AZ CO IN MI SD UT WI

Would you like a TX?

Kevin, WB5RUE  
wb5rue@amsat.org

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: "L. B. Cebik" <cebik@utkux.utcc.utk.edu>  
Subject: [8143] Re: TMPS  
Message-ID: <Pine.SOL.3.91.960503212947.26827E-100000@utkux4.utcc.utk.edu>

On Fri, 3 May 1996, Kevin Muenzler wrote:

> On Friday, May 03, 1996 9:39 AM, chuck adams[SMTP:adams@chuck.dallas.sgi.com]  
wrote:

> >Rick,

> >

> >The principle of reciprocity says that if he can transmit in a direction

> >well he can hear well also.

>

> Not necessarily! I've seen one-way-skip many times.

>

Correct! The principle of reciprocity extends only to the antenna, but not necessarily to the propagation path between skip stations. We often use mirrors struck by photon-bullets as our visual models of radio waves off the ionosphere--with some allowance for refraction being the real mechanism without realizing that we hit the layer with a broad field of radiation and that what we hit is not like silvered glass, but like a thin, lumpy mush. Hence, what works one way may not work as well the other--and when signals are generally weak, the differences show up more readily than when signals are strong. Remember to take into consideration also the terrain conditions if a skip path requires more than one bounce.

Antenna reciprocity is tested in point-to-point situations, not with skip factors intervening.

-73-  
LB, W4RNL

From owner-qrp-1@Lehigh.EDU Fri May 3 23:05:03 1996  
From: davander@niia.net  
Subject: [8146] Re: Windom antennas  
Message-ID: <199605040253.VAA01330@silver.niia.net>

Hello,

I have been using 300 ohm ladder line for over two years here. When I bought mine, I could find it at just about every hamfest...now days seems to be getting harder to find. Was talking to a wire vendor at a recent local hamfest to see if he had some with him, he told me that there wasn't much demand so he discontinued carrying it. Don't know how many other dealers have done the same but the stuff is VERY easy to work with. I run mine to feed loops/rhombics/long center fed dipoles, vee-beams, etc with good luck. In fact, I have stopped using coax for wire antennas altogether because the 300 ohm ladder line works well. I run mine all the way to the shack straight to the tuner. I recommend that you do the same...you won't be disappointed.

Dan Vanderplough, NA9N